transparency to share resources of said storage devices while bypassing operating system (OS) protocol stacks installed in the host server.

REMARKS

Claims 1-28 are pending in this application. Claims 1, 7, 12 and 22 have been amended in several particulars for purposes of clarity and brevity that are unrelated to patentability and prior art rejections to assist the Examiner to expedite compact prosecution of the instant application.

As a preliminary matter, Applicants note that the prosecution of the instant application has not been exemplary of the USPTO. It is disingenuous for the Examiner to state that "Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn." The finality of the last Office action is now withdrawn not because of Applicants' request for reconsideration filed in response to the final Office action, but because of an Appeal Brief filed on November 13, 2001. There is really no justification for the Examiner to reopen prosecution of the instant application after an Appeal Brief is filed before the Board of Appeals and Interferences, particularly in view of the extensive history of the erroneously applied rejections based on Heil et al., U.S. Patent No. 6,173,374, as modified to incorporate selected features from either Angelo et al., U.S. Patent No.6,061,794 or the newly cited Intelligent I/O Architecture Specification, Version 1.5, March 1997. The problem of the previously proposed combination of Heil '374 and Angelo '794 is predicated upon the inherent defect of Heil '374, and that defect does not become rectified by incorporating any subject matter

from either Angelo '794 or the newly cited Intelligent I/O Architecture Specification, Version 1.5, March 1997.

Claims 1-28, as previously discussed, have been rejected under 35 U.S.C. §103 as being unpatentable over Heil et al, U.S. Patent No. 6,173,374 as modified to incorporate selected features from the newly cited Intelligent I/O Architecture Specification, Version 1.5, March 1997 for reasons stated on pages 1-10 of the Office Action (Paper No. 10). Again, the Examiner flip-flops between what is disclosed by Heil '374 to support an assertion that the proposed combination of Heil '374 and the I_20 Architecture Specification (1997) somehow discloses all of the limitations of Applicants' claims 1-28 as pending in this application.

For example, the Examiner asserts, in support of the rejection of independent claims 1 and 14, that Heil '374 as a primary reference discloses:

> a host driver configuration of a host driver module (col 10/line 28-50) of a computer node on a server cluster (Heil, abstract) ... HBA(s) embedded intelligent I_20 standard software, partitions the device driver into one module creating stackable drivers 210-280, col 10/lines 28-31, and col 10/lines 43-col 11/line 4 ....
> comprising: a **Local Transport** arranged to provide an interface to said input/output platform (IOP) ... a **Remote Transport** arranged to provide an interface to export local storage device access onto a computer network ... a **Connection Manager** arranged to establish connection services with remote servers on said computer network and coordinate **functions responsible for creating a direct call path between software driver 250 and software driver 240 to provide access to the local storage devices.** See pages 1-2 of Paper No. 10.

The Examiner has then expressly admitted on the same page of Paper No. 10 that,

> Heil ['374] does **not** teach **functions responsible for creating a direct call path between the transport driver modules to provide access to the local storage devices**; nor wherein that embedded intelligent I_20 standard software comprises an IOP platform.. See page 2, Paper No. 10.

The Examiner then cites section 1.1.2.2, pages 1-4 of the Intelligent I_20 Architecture Specification for allegedly disclosing these features in order to enable an artisan to modify the host system of Heil '374 to incorporate means provided by the Intelligent I_20 Architecture Specification to arrive at Appellants' disclosed invention as defined, for example, in claims 1 and 14.

Again, virtually all the citations from Heil '374 are misplaced. More importantly, the Examiner does not seem to realize what s/he is asserting. On one hand, the Examiner alleges that Heil '374 discloses a host driver module comprising:

> a **Local Transport** arranged to provide an interface to said input/output platform (IOP) ... a **Remote Transport** arranged to provide an interface to export local storage device access onto a computer network ... a **Connection Manager** arranged to establish connection services with remote servers on said computer network and coordinate **functions responsible for creating a direct call path between software driver 250 and software driver 240 to provide access to the local storage devices**. See pages 1-2 of Paper No. 10.

On the other hand, the Examiner expressly admits that,

> Heil ['374] does **not** teach **functions responsible for creating a direct call path between the transport driver modules to provide access to the local storage devices**; nor wherein that embedded intelligent I_20 standard software comprises an IOP platform.. See page 2, Paper No. 10.

Even more puzzling is the fact that no where in Heil '374 or the newly cited Intelligent I$_2$0 Architecture Specification as a secondary reference is there disclosure of any module denoted as "Local Transport", "Remote Transport" and "Connection Manager" as part of a host driver module as identified by the Examiner as lacking from Heil '374. Therefore the rejection of Applicants' claims 1-28 is respectfully traversed for reasons as discussed herein below.

Each of Applicants' independent claims 1, 7, 14 and 22-23 defines a host driver module installed in a host system comprising a "Local Transport arranged to provide an interface to the IOP supporting an array of I/O storage devices," a "Remote Transport arranged to provide an interface to another remote system, via the SAN" and a "Connection Manager arranged to establish connection services and to create a direct call path between the Local Transport and the Remote Transport so as to provide direct access to I/O storage devices."

For example, independent claims 1, 7, 14 and 22 define a host driver module (IOP access module) installed in a host server for exporting I/O storage device access onto a computer network which comprises:

> a Local Transport arranged to provide an interface to an input/output platform (IOP) supporting an array of input/output devices;
>
> a Remote Transport arranged to provide an interface to said another system, via said data network; and
>
> a Connection Manager arranged to establish connection services and to create a direct call path between the Local Transport and the Remote Transport so as to provide access to input/output devices.

As expressly defined in each of Applicants' independent claims 1, 7, 14 and 22 the host driver module 310 installed in a host server including a Connection Manager 312, a Local Transport 314 and a Remote Transport 316 for the purposes of exporting device access to remote devices on a data network (SAN) as shown in FIG. 3. For example, Local Transport 314 is arranged to provide an interface to IOP 320 on the PCI bus 318 supporting an array of IO devices 326. Remote Transport 316 is arranged to provide an interface to remote devices (remote servers) via a SAN. Connection Manager 312 is utilized to establish connection services and create a direct call path between the Local Transport 314 and the Remote Transport 316 so as to provide access to IO devices 326. Data structure pointers as shown in FIG. 4 are exchanged between the Local Transport 314 and the Remote Transport 316 by way of the Connection Manager 312 in order to establish a direct-call relationship between separately installed software modules in order to avoid incurring the overhead of the operating system (OS) protocol stack and coordinating special application-to-application messages as required by the SAN cluster.

The host driver module 310 may be initialized as defined by independent process claim 23 as follows:

> beginning initialization of said driver module which provides access to a local storage system while bypassing protocol stacks of a host operating system, said system driver module comprising a Local Transport which provides direct access to the local storage device system, a Remote Transport which interfaces to other nodes of said system area network, and a Connection Manager which provides connection services and coordinates functions responsible for creating a direct call path between the Local Transport and the Remote Transport;

scanning, at said Local Transport, the local bus to locate and initialize all local input/output platforms (IOPs), and building an IOP context structure for each input/output platform (IOP) found;

preparing, at said Remote Transport, to accept a request for a service connection from said remote server on said system area network;

asking, at said Connection Manager, whether said Local Transport determines the number of input/output platforms (IOPs), and building a descriptor structure for each input/output platform (IOP) which includes an exported table of function call pointers and the context required by the Local Transport to communicate with the input/output platform (IOP); and

establishing a system area network management communication channel through the Remote Transport, which waits for an external connection from said remote server on said system area network for exporting local device access onto said system area network using said direct call path between the Local Transport and the Remote Transport.

In other words, the Local Transport 314 scans the PCI bus 318 to locate and initialize all local IOPs and builds an opaque "context" structure for each IOP found. The Remote Transport 316 then prepares to accept requests through network interface card (NIC) 328. The Connection Manager 312 then queries the Local Transport 314 to determine the number of IOPs and builds a descriptor structure for each IOP (IOP descriptor structure includes an exported table of function call pointers and the context required by the Local Transport 314 to communicate with the IOP), and establish a management communication channel through the Remote Transport 316, which waits for an external connection from a remote server via a SAN for exporting local device access using said direct call path between the Local Transport 314 and the Remote Transport 316.

The host driver module 310 allows, for example, a distributed database running on a cluster of servers to share and directly access all the storage in the cluster transparently. As a result, the overhead incurred by the OS stack on the remote node is avoided via "short-circuiting" at the driver level, and no unique database is required to generate special application-to-application messages to remote nodes in order to access IO storage devices located on remote storage.

In contrast to Applicants' independent claims 1, 7, 14 and 22-23, Heil '374 as a primary reference discloses a system for I/O shipping of requests using peer-to-peer communications between host bus adapters ("HBAs") connected to I/O devices.

Specifically, Heil '374 discloses the use of one or more host bus adapters HBA 112 as shown in FIG. 2 and elements 180, 181 as shown in FIG. 5A installed in a host system of a clustered computer network for processing IO requests received from the host system. Each HBA also serves as a network interface card (NIC) connected to a peer HBA via a Fibre Channel backbone 121 (high-speed communication medium) and contains therein a directory within memory 116 for storing location information regarding blocks of data stored in storage devices and software for searching the directory to determine whether to locally or remotely retrieve blocks of data. The HBA installed in one node of a clustered computer network is operable to establish and maintain communications with at least one other HBA installed in another node of the clustered computer network. However, the HBA of Heil '374 is NOT and does not correspond to a host driver module as defined by Appellants' independent claims 1, 7, 14 and 22-23.

There is no disclosure anywhere from Heil '374 of Applicants' claimed "host driver module" installed in a host system which comprises "a **Local Transport** arranged to provide an interface to an input/output platform (IOP) supporting an array of input/output devices;" "a **Remote Transport** arranged to provide an interface to said another system;" and "a **Connection Manager** arranged to establish connection services and to create a direct call path between the Local Transport and the Remote Transport so as to provide access to IO devices" as generally defined in Applicants' independent claims 1, 7, 14 and 22-23.

Nevertheless, the Examiner argues that Heil '374 discloses these features. However, the Examiner has not provided any evidence to support such an argument. As applied to the determination of patentability when the issue is obviousness, "it is fundamental that the rejection under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section." In re Grasselli, 713 F.2d 731, 739, 218 USPQ2d 769, 715 (Fed. Cir. 1983). The essential factual evidence on the issue of obviousness is set forth in Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., McGinley v. Franklin Sports, Inc, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," the question of fact drawing on the Graham factors).

"The factual inquiry whether to combine references must be thorough and search." Id. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. See, e.g., Brown & Williamson Tobacco Corp., v. Phillip Morris Inc., 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'")(quoting C.R. Bard, Inc., v. M3 Systems, Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)); In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614m 1617 (Fed. Cir. 1999) ("[CAFC] case law makes clear that the best defense against the subtle but power attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.") In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the Applicants); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("teachings of references can be combined **only if** there is some suggestion or incentive to do so.") (emphasis in original) (quoting ACS Hosp. Sys., Inc., v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)).

The need for specificity pervades this authority. See, e.g., In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); In re Rouffet, 149 F.3d 1350, 1359. 47 USPQ2d 1453, 1459 (Fed. Cir. 1998)

("even when the level of skill in the art is high, the Examiner must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Examiner must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the Examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

With respect to this application, no where in Heil '347 is there disclosure of any host driver module including modules denoted as "Local Transport", "Remote Transport" and "Connection Manager" as identified by the Examiner. Nor is there any disclosure from the newly cited Intelligent I_20 Architecture specification that may remedy the noted deficiencies of Heil '347 in order to arrive at Applicants' claims 1-28. In fact, all the cited portions of Heil '347 are misplaced as previously discussed.

For example, the cited FIGs. 1-5A, col 6/lines 34-64 and col 3/lines64-col 4/line 29 of Heil '347 for allegedly disclosing "[an input/output platform (IOP) access] module for providing input/output device access between a host (151) system and another (151) system" [preamble of claims 1, 7, 14 22-23] is incorrect. Rather, that cited portion of Heil '347 refer to the use of a host bus adapter "HBA" which is a device which adapts (connects) a host computer system as shown in FIG. 1 to an I/O device as well as to connect to a Fibre Channel backbone. The host bus adapter "HBA" 117 of Heil '347 may correspond

to a network interface card "NIC" 328 shown in FIG. 3 of Appellants' disclosed invention which is arranged to adapt a host computer system to an I/O device as well as to connect to a SAN. However, the HBA 117 of Heil '347 does not constitute a host driver module (IOP access module) as defined in Applicants' independent claims 1, 7, 14 and 22-23, and shown in FIG. 3 as a separate module from the SAN NIC 328.

Likewise, the cited FIGs. 1 and 5A, 181, 120, 171, 117.8, 117.9, and col. 4/lines 21-29 of Heil '374 for allegedly disclosing Applicants' claimed "host driver module including a Local Transport, a Remote Transport and a Connection Manager" is also incorrect.

FIG. 5A, element 181 of Heil '374 refers to a host bus adapter "HBA". FIG. 5A, element 120 of Heil '374 refers to a fiber channel chip which is a critical component of the HBA that is connected to the PCI bus 116.5 and the Fibre Channel backbone 121. FIG. 5A, element 171 of Heil '374 refers to a front-end interface (IF) of either a HBA 180 or HBA 181 to provide an interface to a PCI bus 116.5. Neither of these cited elements constitutes the features of Applicants' claimed host driver module including a Local Transport, a Remote Transport and a Connection Manager as expressly defined in each of independent claims 1, 7, 14 and 22-23.

In fact, as shown in FIG. 5A (an alternative embodiment) of Heil '374, two HBAs 180 and 181 may be utilized in a single node (or host computer system). HBA 180 is used to process IO requests directed to local devices 118. HBA 181 is used to support remote IO requests from the Fibre Channel backbone 121. These two HBA 180 and 181 are hardware devices configured to perform stated specific

functions. The Examiner simply cannot cite a single HBA 117 (see FIG 1) in one embodiment of Heil '374 to correspond Appellants' claimed single host driver module (IOP access module), and cite two other HBAs 180, 181 (see FIG. 5) in another embodiment of Heil '374 to corresponding the Local Transport and Remote Transport components of Applicants' claimed host driver module (IOP access module), and then cite an internal hardware of the same HBAs 180, 181 to correspond the Connection Manager component of Appellants' claimed IOP access module. This is highly improper. Two prior art HBA devices cannot be distorted and improperly interpreted in such a way just to read on Applicants' claimed host driver module (IOP access module), particularly when the prior art HBA hardware devices are completely different from Appellants' claimed host driver module (IOP access module.

Similarly, the cited col. 6, lines 34-64 of Heil '374 for allegedly disclosing Applicants' claimed "service connection to a local input/output platform (IOP) connected to a local bus using a driver module" is also incorrect. That cited portion of Heil '374 simply depicts a host system as shown in FIG. 1 including essential components such as CPU 100, cache 105, processor bus 110, host-to-PCI bus bridge 115 and a PCI bus 116. No reference to any input/output platform (IOP) as defined in claim 23, see FIG. 3.

The cited col. 4, lines 3-20 of Heil '374 for allegedly disclosing Applicants' claimed "module (Local Transport) which provides direct access to the local storage system" is also incorrect. That cited portion of Heil '374 describes a host bus adapter (HBA) which is a hardware component adapted to connect a host system to an IO device as well as to connect to a Fibre Channel backbone. The HBA of Heil '372

is analogous to the SAN network interface card (NIC) 328 shown in FIG. 3 of Appellants' disclosed invention.

In contrast to the HBA of Heil '372, Applicants' claimed "Local Transport" is a part of the host driver module (IOP access module) along with the Remote Transport and the Connection Manager and is arranged to provide an interface to an IOP supporting an array of IO devices.

The cited col. 4, lines 21-29, FIG. 5A of Heil '374 for allegedly disclosing Applicants' claimed "module (Remote Transport) which interfaces with other nodes of said system network" is also incorrect. That cited portion of Heil '374 describes how the host bus adapter (HBA) which is a hardware component installed in each node of a Fibre Channel is able communicate among each other as peers. Again, **no** disclosure of any "Remote Transport".

The cited col. 12, line 9 extending to col. 13, line 13 of Heil '374 for allegedly disclosing Applicants' claimed "building [an IOP] descriptor structure for each input/output platform (IOP) which includes an exported table of function call pointers and the context required by the Local Transport to communicate with the input/output platform (IOP)" is likewise incorrect. That cited portion of Heil '374 only describes how the host system and the HBA are initialized and how the HBAs build a local directory containing the mapped location information for respective local storage subsystems 504.

The Examiner argues that Applicants' claimed IOP descriptor structure as shown in FIG. 4 is analogous to the use of an HBA directory (map) (i.e. descriptors and addresses of routines located with a region of memory). Again, this line of argument is incorrect. This is because Applicants' claimed "IOP

descriptor structure" is established for a direct call interface between the Local Transport 314 and Remote Transport 316 in order to access to each IOP, whereas the HBA directory of Heil '374 is used to map location information of local storage subsystems. Therefore, no IOP descriptor structure is disclosed by Heil '374.

Lastly, the cited col. 6, lines 34-64 of Heil '374 for allegedly disclosing the "service connection to a local input/output platform (IOP) connected to a local bus using a driver module" is also incorrect. Rather, that cited portion of Heil '374 simply depicts a host system as shown in FIG. 1 including essential components such as CPU 100, cache 105, processor bus 110, host-to-PCI bus bridge 115 and a PCI bus 116. Similarly, the cited col. 4, lines 3-20 of Heil '374 does NOT disclose any claimed "module (Local Transport) which provides direct access to the local storage system". Rather, that cited portion of Heil '374 only describes a host bus adapter (HBA) which is a hardware component adapted to connect a host system to an IO device as well as to connect to a Fibre Channel backbone. Likewise, the cited col. 4, lines 21-29, FIG. 5A of Heil '374 does not disclose any claimed "module (Remote Transport) which interfaces with other nodes of said system network". Instead, that cited portion of Heil '374 only describes how the host bus adapter (HBA) which is a hardware component installed in each node of a Fibre Channel is able communicate among each other as peers. Furthermore, the cited FIG. 5A, element 171 of Heil '374 does not disclose any claimed "Connection Manager which provides connection services and coordinate functions responsible for creating **a direct call path between the Local Transport and the Remote Transport**" as defined in Applicants' claims 1, 7, 14 and 22-23. Rather, element 171 is simply

a front-end interface as shown in FIG. 5A for providing an interface to a PCI bus 116.5. There is no disclosure of any "Connection Manager" whatsoever.

In view of the foregoing reasons and the complete failure of Heil '374 and the newly cited Intelligent I_20 Architecture Specification to disclose the claimed features as alleged by the Examiner, Applicants respectfully request that the rejection of Applicants' independent claims 1, 7, 14 and 22-23 be reversed.

Claims 2-6, 8-13, 15-21 and 24-28 which depend from claims 1, 7, 14 and 22-23 are deemed patentable from claims 1, 7, 14 and 22-23 if their parent claims 1, 7, 14 and 22-23 are patentable. Hartness Int'l, Inc., v. Simplicatic Eng'g Co., 891 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed. Cir. 1987); In re Abele, 684 F.2d 909, 214 USPQ 682, 689 (CCPA 1982) *see also* In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983).

Even assuming *arguendo* that independent claims 1, 7, 14 and 22-23 are not patentable under 35 U.S.C. §103(a), which Appellants do not believe, dependent claims 2-6, 8-13, 15-21 and 24-28 are separately patentable from parent claims 1, 7, 14 and 22-23 for reasons presented herein below.

For example, dependent claims 4, 15 and 24 further defines that the IOP comprises: "one or more IO processors, IO devices, a device driver module and a communication layer which defines a mechanism for communications between the Local Transport and the device driver module" which is **not** disclosed anywhere in Heil '374 or the Intelligent I_20 Architecture Specification.

Dependent claims 5, 9, 16 and 25 further define that the "communication layer is responsible for managing all service requests and providing a set of Application Programming Interfaces (APIs) for

delivering messages, along with a set of support routines that process the messages" which is **not** disclosed anywhere in Heil '374 or the Intelligent I_20 Architecture Specification.

Dependent claims 6, 10, 16 and 25 further define that the "communication layer comprises a message layer which sets up a communication session, and a transport layer which defines how information will be shared" which is **not** disclosed anywhere in Heil '374 or the Intelligent I_20 Architecture Specification.

Dependent claim 11 further defines that "the host driver module and the device driver module constitute a single device that is portable across a plurality of operating systems and host network platforms, and works interoperably with a plurality of storage devices and operating systems" which is **not** disclosed anywhere in Heil '374 or the Intelligent I_20 Architecture Specification.

Likewise, dependent claims 20 and 27 further define that "the Local Transport has a send handler function and the Remote Transport has a receive handler function which are respective program interfaces for receiving an inbound message from a remote server on a computer network for direct access to local input/output platform and for delivering an outbound message to said remote server on a computer network" which is **not** disclosed anywhere in Heil '374 or the Intelligent I_20 Architecture Specification.

In view of the foregoing explanations, and in view of the fact that neither Heil '374 nor the Intelligent I_20 Architecture Specification, whether taken in combination or individually, discloses and suggests Applicants' dependent claims 2-6, 8-13, 15-21 and 24-28, Applicants respectfully request that the rejection of dependent claims 2-6, 8-13, 15-21 and 24-28 be reversed as well.

ATSK No. 219.36435X00
LID No. P6321

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600.

Attached hereto is a marked-up version of the changes made to the claims. The attached page is captioned "**Version with markings to show changes made**."

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1,136. Applicants have submitted fees for the claims added by this Amendment. Please charge any shortage of fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, No. 01-2135 (Application No. 219.36435X00), and please credit any excess fees to said deposit account.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend claims 1, 7, 12 and 22, as follows:

1. (Twice Amended) An input/output platform (IOP) access module installed in a host system for providing input/output device access between [a] the host system and another system, via a data network, said IOP access module comprising:

a Local Transport arranged to provide an interface to an input/output platform (IOP) supporting an array of input/output devices;

a Remote Transport arranged to provide an interface to said another system, via said data network; and

a Connection Manager arranged to establish connection services and to create a direct call path between the Local Transport and the Remote Transport so as to provide access to input/output devices.

7. (Twice Amended) A host system, comprising:

a processor including an operating system (OS);

an array of storage devices;

a driver module for exporting local storage device access onto a computer network, said driver module comprising:

a device driver module arranged to provide an interface to said array of local storage devices;

a host driver module arranged to provide an interface to [an] the operating system (OS), said host driver module comprising a Local Transport which communicates with the device driver module, a Remote Transport which provides an interface to said computer network, and a Connection Manager which establishes connection services with remote systems on said computer network and coordinates functions responsible for creating a direct call path between the Local Transport and the Remote Transport to provide access to said storage devices; and

a communication layer which supports communications between the host driver module and the device driver module.

12. (Twice Amended) The host system of claim 9, wherein said host driver module and said device driver module operate in accordance with an Intelligent Input/Output (I_2O) specification for allowing storage devices to operate independently from the operating system (OS).

22. (Amended) A process of exporting storage device access onto a computer network using an input/output platform (IOP) access module of a host server, comprising the steps of:

providing an interface to an input/output platform (IOP) supporting an array of storage devices;

providing an interface to a remote server on said computer network;

establishing service connection between said host server and said remote server on said computer network in response to a request from a remote server on said computer network; and

after the service connection between said host server and said remote server on said computer network is established, enabling said remote server to directly access [providing a direct call access to] said storage devices with transparency [for said remote server] to share resources of said storage devices while bypassing operating system (OS) protocol stacks installed in the host server.